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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,202	07/29/2003	Joseph W. Hoff	84956NAB	1128

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EXAMINER	
CALEY, MICHAEL H	

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/632,202	HOFF ET AL.	
	Examiner	Art Unit	
	Michael H. Caley	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 6-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-22,25-29 and 31-33* is/are rejected.

7)☐ Claim(s) *6,23,24 and 30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/13/05 has been entered.

Claim Objections

Claim 7 is objected to because of the following informalities:

Claim 7 is dependent on cancelled claim 5.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 7, 12-14, 16, 17, 19-22, and 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coates et al. (U.S. Patent No. 6,867,834 "Coates") in view of Tasaka et al. (U.S. Patent No. 6,814,914 "Tasaka").

Regarding claim 1, Coates discloses a method for manufacturing an optical compensator comprising:

a retardation layer (Figure 2 element 5);

applying a first orientation layer on the retardation layer (Column 7 lines 51-54, Column 10 lines 37-50, Column 12 lines 43-46, Column 18 lines 33-35);

aligning the first orientation layer (Column 18 lines 33-35); and

applying a first anisotropic liquid crystal material on the first orientation layer (Column 17 lines 39-43).

Coates fails to disclose applying a retardation layer directly onto the surface of a transitional substrate. Tasaka, however, teaches stretched retardation layers, such as disclosed by Coates (Coates: Column 10 lines 37-41), as formed using a transitional substrate (abstract; Column 18 lines 1-45, transitional substrate: Column 18 lines 1-5) as part of a stretching method producing better optical and physical uniformity of the stretched film (Column 2 lines 1-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the retardation layer disclosed by Coates by applying the layer to a transitional substrate as taught by Tasaka. One would have been motivated to apply the retardation layer to a transitional substrate to benefit from the manufacturing benefits of such a stretched layer taught by Tasaka such as better optical and physical uniformity (Column 2 lines 32-37) and a high film forming speed (Column 18 lines 31-45).

Regarding claim 2, Tasaka discloses the transitional substrate as removed (Column 18 lines 45-54).

Regarding claim 7, Tasaka discloses applying the retardation layer by coating (Column 18 lines 1-45).

Regarding claim 12, Coates discloses the retardation layer as comprised of triacetyl cellulose (Column 10 line 49).

Regarding claim 13, Coates discloses the first orientation layer as applied by coating (Column 18 lines 33-35).

Regarding claim 14, Coates discloses the first anisotropic liquid crystal material as applied by coating (Column 17 lines 39-43).

Regarding claim 16, Coates discloses the optical compensator as applied to a liquid crystal display cell (Figure 2).

Regarding claim 17, Coates fails to disclose the orientation layer as comprising polyvinyl cinnamate. The examiner takes Official notice that polyvinyl cinnamate is a commonly used material for constructing an orientation layer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used polyvinyl cinnamate as an orientation layer in the compensator disclosed by Coates. One would have been motivated to use such a material for the orientation layer to benefit from the expected results of the layer as an orientation layer.

Regarding claim 19, Coates discloses the orientation layer as oriented through rubbing (Column 18 line 34).

Regarding claims 20 and 21, Coates fails to disclose the anisotropic layer as discotic or calamitic liquid crystal. The examiner takes Official notice that both discotic and calamitic liquid crystals are commonly used materials for a liquid crystal compensator.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the anisotropic layer from a calamitic or discotic liquid crystal. One would have been motivated to use such a material for the anisotropic layer to benefit from the expected results of such a layer, such as a preferred viewing angle characteristic.

Regarding claim 22, Coates discloses the anisotropic liquid crystal material as polymerizable via actinic radiation (Column 12 lines 6-12).

Regarding claims 25 and 26, Coates discloses a second orientation layer and a second anisotropic layer forming a plurality of orientation layers and a plurality of anisotropic layers forming an integral component (Figure 2) wherein an optical axis of each anisotropic layer is

positioned relative to an optical axis of each anisotropic layer by an angle about an axis perpendicular to a plane of each of the substrates (Column 22 line 27 – Column 23 line 24; Table 2).

Regarding claim 27, Coates discloses a retardation layer (Figure 2 element 5'') on top of the anisotropic layer.

Regarding claims 28 and 29, Coates discloses a retardation layer on top of the pluralities of orientation layers and anisotropic layers (Figure 3 elements 5, 3, 6, and 4).

Claims 3, 4, 8-11, 15, and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coates in view of Tasaka and in further view of Umeda et al. (U.S. Patent Application Publication 2003/0067572 "Umeda").

Regarding claims 3 and 4, Coates fails to disclose a load average stress for the removal of the transitional substrate. Umeda, however, teaches a peeling tension of 9.8 N/m (Page 20 [0328]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a peeling tension as proposed for the substrate removal. One would have been motivated to use such a low peeling tension as taught by Umeda to maintain the uniform optical properties of the compensator. It is well known in the art that excessive stretching or compressive stress to an optical compensator layer can vary the optical properties of the layer.

Regarding claims 8 and 9, Coates fails to disclose the thickness of the compensator. Umeda, however, teaches a range for the thickness as from 1 to 1000 microns (Page 13 [0231]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the compensator to have a thickness less than 30 micrometers. One would have been motivated to form the compensator with the proposed thickness to achieve a particular viewing angle characteristic to improve particular viewing angle properties within the disclosure of Umeda (Page 1 [0013-0014]).

Regarding claims 10 and 11, Saynor fails to disclose the retardation layer as having the proposed birefringence. Umeda, however, teaches a range of birefringence for a retardation layer on which an anisotropic liquid crystal layer is formed including the proposed ranges.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the retardation layer to have the proposed birefringence. One would have been motivated to form the retardation layer with the birefringence to achieve a particular viewing angle characteristic to improve particular viewing angle properties within the disclosure of Umeda (Page 1 [0013-0014]).

Regarding claim 15, Coates fails to disclose a barrier layer applied between the retardation layer and the first orientation layer. Umeda, however, teaches such a layer (Page 25 [0375]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed a barrier layer between the retardation layer and the first orientation

layer. One would have been motivated to form such a layer to prepare the retardation layer to be a proper support for the orientation layer (Page 25 [0375]).

Regarding claims 31-33, Coates discloses the steps of repeating the proposed steps to form a plurality of orientation layers and anisotropic layers to form an integral component wherein an optical axis of each anisotropic layer is positioned relative to respective optical axis of the other anisotropic layers by an angle about an axis perpendicular to a plane of each of the substrates (Figure 3 elements 5, 3, 6, and 4; Table 3). Coates fails to disclose the step of applying a second orientation layer to the first anisotropic liquid crystal material. Umeda, however teaches constructing a compensator stack by applying a second alignment layer (Figure 1 element A-2) to a first anisotropic liquid crystal material (Figure 1 element LC-1) as a preferred method of constructing such a stack of anisotropic liquid crystal layers on one side of a substrate (Page 23 [0344]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the optical compensator by applying the second orientation to the first anisotropic liquid crystal. One would have been motivated to form the compensator as taught by Umeda to benefit from the viewing angle characteristic of a compensator having multiple anisotropic liquid crystal films on one side of a substrate as disclosed by Coates.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coates in view of Tasaka and in further view of Chung et al. (U.S. Patent No. 5,995,184 "Chung").

Regarding claim 18, Coates fails to disclose the orientation layer as oriented through photoalignment. Chung, however, teaches photoalignment as an acceptable method for aligning an orientation layer (Column 6 line 50 – Column 7 line 6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have oriented the orientation layer disclosed by Saynor according to any of the proposed conventional methods. One would have been motivated to orient the layer according to a particular method to achieve a desired type of orientation, such as homeotropic or planar, more suited to a particular technique (Chung, Column 7 lines 4-6).

Allowable Subject Matter

Claims 6, 23, 24, and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 6, 23, and 25, Tasaka teaches a specular metal support as the transitional substrate in the form of a belt or drum. The prior art fails to disclose or suggest a transitional substrate that is formed of PET, a polymer solution, or that is extruded.

Regarding claim 30, the prior art fails to disclose or suggest the compensator constructed from the proposed method steps of claims 1 and 30 in which transitional substrates are removed from compound compensation films.

Response to Arguments

Applicant's arguments with respect to claims 1-4 and 6-33 have been considered but are moot in view of the new ground(s) of rejection.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael H. Caley whose telephone number is (571) 272-2286. The examiner can normally be reached on M-F 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael H. Caley
November 14, 2005
mhc

ANDREW SCHECHTER
PRIMARY EXAMINER